Kevin M. Harris
Sun Polymers International, Inc.
P. O. Box 249, Mooresville, IN 46158

Re: Registered Construction and Operation Status,
109-14794-00036

Dear Mr. Harris:

The application from Sun Polymers International, Inc. received on August 20, 2001, has been reviewed. Based on the data submitted and the provisions in 326 IAC 2-5.5, it has been determined that the following emission units, to be located at Meadowbrook Business Park, Mooresville, Indiana 46158, are classified as registered:

(a) One (1) natural gas-fired steam boiler with a maximum heat input capacity of 5 million BTU/hr, exhausting to stack S2.

(b) One (1) natural gas-fired thermal fluid heating boiler with a heat input of 8 million BTU/hr, exhausting to stack S1.

(c) One (1) natural gas-fired furnace, with a heat input capacity of 0.8 million BTU/hr, exhausting to stack S3.

(d) One (1) liquid waste incinerator, with a maximum capacity of 1936.7 pounds of waste per hour, using natural gas with a maximum heat input rate of 5.23 million BTU/hr, exhausting to stack S4.

(e) Two (2) above ground storage tanks, with a maximum capacity of 2000 gallons.

The following conditions shall be applicable:

Pursuant to 326 IAC 5-1-2 (Opacity Limitations) except as provided in 326 IAC 5-1-3 (Temporary Exemptions), opacity shall meet the following:

(a) Opacity shall not exceed an average of forty percent (40%) in any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.

(b) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of 15 minutes (60 readings) in a 6-hour period as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor in a six (6) hour period.

Pursuant to 326 IAC 6-3-2 (Process Operations) the particulate matter (PM) from the polyester resin production plant shall be limited by the following:

Interpolation and extrapolation of the data for the process weight rate up to sixty thousand (60,000) pounds per hour shall be accomplished by use of the equation:

$$E = 4.10\ P^{0.67}$$

where E = rate of emission in pounds per hour and

P = process weight rate in tons per hour

Assuming a maximum process rate of 10,000 lbs/hr the allowable PM emissions will be 12.05 lbs/hr.

Pursuant to 326 IAC 6-2-4 (Particulate emissions limitations for sources of indirect heating) the particulate emissions from the two (2) natural gas-fired boilers shall be limited by the following equation:

$$Pt = 1.09/Q^{0.26}$$

where:

Pt = Pounds of particulate matter (PM) emitted per million BTU heat input (lb/mmBTU)
Q = Total source maximum operating capacity rating in million BTU per hour heat input.

For Q = 13 mmBTU/hr, the PM emissions from the two (2) boilers shall be limited to 0.55 lb/mmBTU.

This registration is a revised registration issued to this source. The source may operate according to 326 IAC 2-5.5.

An authorized individual shall provide an annual notice to the Office of Air Quality that the source is in operation and in compliance with this registration pursuant to 326 IAC 2-5.5-4(a)(3). The annual notice shall be submitted to:

Compliance Data Section
Office of Air Quality
100 North Senate Avenue
P.O. Box 6015
Indianapolis, IN 46206-6015

no later than March 1 of each year, with the annual notice being submitted in the format attached.

An application or notification shall be submitted in accordance with 326 IAC 2 to the Office of Air Quality (OAQ) if the source proposes to construct new emission units, modify existing emission units, or otherwise modify the source.

Sincerely,

Paul Dubenetzky, Chief
Permits Branch
Office of Air Quality

mm
cc: File - Morgan County
Morgan County Health Department
Air Compliance - Joe Foyst
Permit Tracking - Janet Mobley
Technical Support and Modeling - Michele Boner
Compliance Data Section - Karen Nowak

Registration
Annual Notification

This form should be used to comply with the notification requirements under 326 IAC 2-5.5-4(a)(3).

Company Name: Sun Polymers International, Inc.

Address: Meadowbrook Business Park

City: Mooresville, IN 46158

Authorized individual:

Phone #:

Registration #:109-14794-00036

I hereby certify that Sun Polymers International, Inc. is still in operation and is in compliance with the requirements of Registration 109-14794-00036.

Name (typed):

Title:

Signature:

Date:

Indiana Department of Environmental Management
Office of Air Quality

Technical Support Document (TSD) for a Registration

Source Background and Description

Source Name:	**Sun Polymers International, Inc.**
Source Location:	**Meadowbrook Business Park, Mooresville, IN 46158**
County:	**Morgan**
SIC Code:	**2821**
Operation Permit No.:	**109-14794-00036**
Permit Reviewer:	**Madhurima D. Moulik**

The Office of Air Quality (OAQ) has reviewed an application from Sun Polymers International Inc., relating to the operation of a saturated polyester resin manufacturing plant.

Permitted Emission Units and Pollution Control Equipment

The source consists of the following permitted emission units and pollution control devices:

(a) One (1) natural gas-fired steam boiler with a maximum heat input capacity of 5 million BTU/hr, exhausting to stack S2.

(b) One (1) natural gas-fired thermal fluid heating boiler with a heat input of 8 million BTU/hr, exhausting to stack S1.

(c) One (1) natural gas-fired furnace, with a heat input capacity of 0.8 million BTU/hr, exhausting to stack S3.

New Emission Units and Pollution Control Equipment

(a) One (1) liquid waste incinerator, with a maximum capacity of 1936.7 pounds of waste per hour, using natural gas with a maximum heat input rate of 5.23 million BTU/hr, exhausting to stack S4.

(b) Two (2) above ground storage tanks, with a maximum capacity of 2000 gallons.

Existing Approvals

The source has been operating under previous approvals including, but not limited to, the following:

(a) CP 109-9952-00036 issued on October 1, 1998.

All conditions from previous approvals were incorporated into this permit.

Stack Summary

Stack ID	Operation	Height (feet)	Diameter (feet)	Flow Rate (acfm)	Temperature (^{0}F)
S1	Boiler	34	2.5	5450	768
S2	Steam Boiler	34	1.42	2007	450
S3	Furnace	34	0.5	203	350
S4	Incinerator	74	24	5988	1400

Enforcement Issue

There are no enforcement actions pending.

Recommendation

The staff recommends to the Commissioner that the operation be approved. This recommendation is based on the following facts and conditions:

Unless otherwise stated, information used in this review was derived from the application and additional information submitted by the applicant.

An application for the purposes of this review was received on August 20, 2001.

Emission Calculations

See Appendix A of this document for detailed emissions calculations. The emissions from the above-ground tank for storing an aqueous solution (2%) of neopentylglycol is assumed to be negligible.

Potential To Emit

Pursuant to 326 IAC 2-1.1-1(16), Potential to Emit is defined as "the maximum capacity of a stationary source or emissions unit to emit any air pollutant under its physical and operational design. Any physical or operational limitation on the capacity of a source to emit an air pollutant, including air pollution control equipment and restrictions on hours of operation or type or amount of material combusted, stored, or processed shall be treated as part of its design if the limitation is enforceable by the U. S. EPA, the department, or the appropriate local air pollution control agency."

Pollutant	Potential To Emit (tons/year)
PM	6.5
PM-10	6.5
SO_2	0.1
VOC	8.6
CO	7.0
NO_x	8.3
Xylene (HAP)	0.15
Combination HAPs	0.15

(a) The potential to emit (as defined in 326 IAC 2-7-1(29)) of all criteria pollutants are less than 100 tons per year. Therefore, the source is not subject to the provisions of 326 IAC 2-7.

(b) The potential to emit (as defined in 326 IAC 2-7-1(29)) of any single HAP is less than ten (10) tons per year and the potential to emit (as defined in 326 IAC 2-7-1(29)) of a combination HAPs is less than twenty-five (25) tons per year. Therefore, the source is not subject to the provisions of 326 IAC 2-7.

(c) The potential to emit (as defined in 326 IAC 2-7-1 (29) of PM, $PM_{10,}$ is less than twenty five (25) tons per year but greater than five (5) tons. Therefore, the source is subject to the provisions of 326 IAC 2-5.

Actual Emissions

No previous emission data has been received from the source.

County Attainment Status

The source is located in Morgan County.

Pollutant	Status
PM-10	attainment
SO_2	attainment
NO_2	attainment
Ozone	attainment
CO	attainment
Lead	attainment

(a) Volatile organic compounds (VOC) and oxides of nitrogen (NOx) are precursors for the formation of ozone. Therefore, VOC emissions are considered when evaluating the rule applicability relating to the ozone standards. Morgan County has been designated as attainment or unclassifiable for ozone. Therefore, VOC and NOx emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2 and 40 CFR 52.21.

(b) Morgan County has been classified as attainment or unclassifiable for all the other criteria pollutants. Therefore, these emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2 and 40 CFR 52.21.

Source Status

Existing Source PSD, Part 70 or FESOP Definition (emissions after controls, based on 8,760 hours of operation per year at rated capacity and/ or as otherwise limited):

Pollutant	Emissions (ton/yr)
PM	6.5
PM10	6.5
SO_2	0.1
VOC	8.6
CO	7.0
NO_x	8.3

This existing source is not a major stationary source because no attainment regulated pollutant is emitted at a rate of 250 tons per year or more, and it is not in one of the 28 listed source categories.

Part 70 Permit Determination

326 IAC 2-7 (Part 70 Permit Program)

This existing source, including the emissions from the new units, is still not subject to the Part 70 Permit requirements because the potential to emit (PTE) of:

(a) each criteria pollutant is less than 100 tons per year,
(b) hazardous air pollutant (HAP) xylene is emitted at less than 10 tons per year,
(c) combination HAPS is emitted at less than 25 tons per year.

This status is based on all the air approvals issued to the source.

Federal Rule Applicability

(a) The incinerator at this source has a charge rate of less than 50 tons/day. Therefore, the source is not subject to the New Source Performance Standards for incinerators (NSPS)(40 CFR 60.50, Subpart E).

(b) Each of the two (2) boilers at this source has a maximum heat input rate of less than 10 million BTU/hr. Therefore, the boilers are not subject to the NSPS for small industrial-commercial-institutional steam generating units (40 CFR 60.40 Subpart Dc).

(c) The aqueous solution of neopentylglycol does not meet the definition of hazardous waste as defined in 40 CFR 261 Subpart A. Neopentylglycol is not listed as a hazardous waste in 40 CFR 261 Subpart C (Characteristics of Hazardous Waste), Subpart D (Hazardous Waste from Specific and Non-Specific Sources) or Appendix VIII (Hazardous Constituents). Therefore, the incinerator is not subject to the Hazardous Air Pollutants Standards (NESHAPs) 40 CFR 63 Subpart EEE (National Emission Standards for Hazardous Air Pollutants from Hazardous Waste Combustors), because the material burned is not a hazardous waste.

(d) This source does not manufacture any organic chemical listed in 40CFR 63.100 Subpart F (Table 1). Therefore, the Hazardous Air Pollutants Standards (NESHAPs) (40 CFR Part 63, Subpart F) does not apply.

State Rule Applicability - Entire Source

326 IAC 2-6 (Emission Reporting)

This source is located in Morgan county and the potential to emit VOC and NO_X (pollutant) is less than ten (10) tons per year. The source is not one of the twenty-eight (28) listed sources and its potential to emit PM10 is less than one-hundred (100) tons per year including fugitive emissions, therefore, 326 IAC 2-6 does not apply.

326 IAC 5-1 (Visible Emissions Limitations)

Pursuant to 326 IAC 5-1-2 (Opacity Limitations), except as provided in 326 IAC 5-1-3 (Temporary Exemptions), opacity shall meet the following, unless otherwise stated in this permit:

(a) Opacity shall not exceed an average of forty percent (40%) any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.

(b) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of fifteen (15) minutes (sixty (60) readings) as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a

continuous opacity monitor) in a six (6) hour period.

State Rule Applicability - Individual Facilities

326 IAC 6-3-2 (Process Operations)

The particulate matter (PM) from the polyester resin production plant shall be limited by the following:

Interpolation and extrapolation of the data for the process weight rate up to sixty thousand (60,000) pounds per hour shall be accomplished by use of the equation:

$$E = 4.10\ P^{0.67}$$

where E = rate of emission in pounds per hour and
P = process weight rate in tons per hour

Assuming a maximum process rate of 10,000 lbs/hr the allowable PM emissions will be 12.05 lbs/hr.

326 IAC 4-2-2 (Incinerators: requirements)

The incinerator at this source does not emit any regulated pollutant. Therefore, 326 IAC 4-2-2 does not apply.

326 IAC 6-2-4 (Particulate emissions limitations for sources of indirect heating)

The two (2) boilers at this plant are sources of indirect heating, constructed after 1983, and are located in Morgan county, which is one of the counties listed in this rule. Therefore, the boilers are subject to 326 IAC 6-2-4.

The particulate emissions from the two (2) boilers shall be limited by the following equation:

$$Pt = 1.09/Q^{0.26}$$

where:
Pt = Pounds of particulate matter (PM) emitted per million BTU heat input (lb/mmBTU)

Q = Total source maximum operating capacity rating in million BTU per hour heat input.

Q = 13 mmBTU/hr (for the boilers)

Therefore, the PM emission from the two (2) boilers is limited to 0.55 lb/mmBTU.

326 IAC 8-9-4 (Volatile organic liquid storage vessels: standards)

This source is located in Morgan county, which is not one of the counties listed in rule 326 IAC 8-9. Therefore, 326 IAC 8-9-4 does not apply to the storage vessels at this source.

Conclusion

The operation of this saturated polyester resin manufacturing plant shall be subject to the conditions of the attached Registration 109-14794-00036.

Appendix A: Emissions Calculations
Natural Gas Combustion Only
MM BTU/HR <100
Small Industrial Boiler
Company Name: Sun Polymers International, Inc.
Address City IN Zip: Meadowbrook Business Park
CP: 109-14794
Plt ID: 109-00036
Reviewer: Madhurima D. Moulik
Date: Sep 3, 2001

Heat Input Capacity MMBtu/hr	Potential Throughput MMCF/yr
19.0	166.7

	Pollutant					
	PM*	PM10*	SO2	NOx	VOC	CO
Emission Factor in lb/MMCF	7.6	7.6	0.6	100.0 **see below	5.5	84.0
Potential Emission in tons/yr	0.6	0.6	0.1	8.3	0.5	7.0

*PM emission factor is filterable PM only. PM10 emission factor is condensable and filterable PM10 combined.

**Emission Factors for NOx: Uncontrolled = 100, Low NOx Burner = 50, Low NOx Burners/Flue gas recirculation = 32

Methodology

All emission factors are based on normal firing.
MMBtu = 1,000,000 Btu
MMCF = 1,000,000 Cubic Feet of Gas

Potential Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,000 MMBtu
Emission Factors are from AP 42, Chapter 1.4, Tables 1.4-1, 1.4-2, 1.4-3, SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03 (SUPPLEMENT D 3/98)
Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton
Note: Check the applicable rules and test methods for PM and PM10 when using the above emission factors to confirm that the correct factor is used (i.e., condensable included/not included).

See page 2 for HAPs emissions calculations.

Appendix A: Emissions Calculations
Natural Gas Combustion Only
MM BTU/HR <100
Small Industrial Boiler
HAPs Emissions
Company Name: Sun Polymers International, Inc.
Address City IN Zip: Meadowbrook Business Park
CP: 109-14794
Plt ID: 109-00036
Reviewer: Madhurima D. Moulik
Date: Sep 3, 2001

HAPs - Organics

	Benzene	Dichlorobenzene	Formaldehyde	Hexane	Toluene
Emission Factor in lb/MMcf	2.1E-03	1.2E-03	7.5E-02	1.8E+00	3.4E-03
Potential Emission in tons/yr	1.750E-04	1.000E-04	6.251E-03	1.500E-01	2.834E-04

HAPs - Metals

	Lead	Cadmium	Chromium	Manganese	Nickel
Emission Factor in lb/MMcf	5.0E-04	1.1E-03	1.4E-03	3.8E-04	2.1E-03
Potential Emission in tons/yr	4.168E-05	9.169E-05	1.167E-04	3.167E-05	1.750E-04

Methodology is the same as page 1.

The five highest organic and metal HAPs emission factors are provided above.

Saturated Polyester Resin Production Emissions
And Silo Conveying and Bagging Emissions
Company Name: Sun Polymers International Inc.
Address City State Zip: Meadowbrook Business Park, Mooresville, IN 46158
CP: 109-14794
Plt ID: 109-00036
Reviewer: Madhurima D. Moulik
Date: Sep 4, 2001

Emission Factor for Resin Production: 2.4 lb of VOC/ton of material (developed by Wisconsin DNR)

Material used:

18,000 lb/batch of Neopentylglycol
33,000 lb/batch of Terepthalic Acid
4500 lb/batch of Isopthalic Acid

VOC Emissions = 55500 lb/batch x 1 batch/36 hr x 8760 hr/yr x 1 ton/2000 lb x 2.4 lb VOC/ton
= 16200 lb VOC/yr
= 8.1 tons VOC/yr

The operation that closely matches silo conveying and bagging process is grain loadout.
Therefore, grain loadout emission factor of 0.27 lb of PM and PM-10 per ton of material transported has been used.

Emissions of PM = PM-10:

= 10,000 lb/hr x 1 ton/2000lb x 0.27 lb PM (and PM-10)/ton x 8760 hr/yr

= 11820 lb/hr

= 5.9 tons/yr

Appendix A: Emission Calculations
Total Emissions
Sun Polymers International Inc.
Address City IN Zip: Meadowbrook Business Park, Mooresville, IN 46158
CP: 109-14794
Plt ID: 109-00036
Reviewer: Madhurima D. Moulik
Date: Sep 4, 2001

Total Potential Emissions in Tons Per Year

	PM	PM-10	SO2	NOx	VOC	CO	Xylene (HAP)
Industrial Boiler + Furnace	0.60	0.60	0.10	8.30	0.50	7.00	0.15
Resin production	0.00	0.00	0.00	0.00	8.10	0.00	0.00
Silo Conveying + Bagging	5.90	5.90	0.00	0.00	0.00	0.00	0.00
Potential Emissions (tpy)	**6.50**	**6.50**	**0.10**	**8.30**	**8.60**	**7.00**	**0.15**

	Combination HAPs
Potential Emissions (tpy)	**0.15**